

## ABSTRACT OF THE DISCLOSURE

In some embodiments, a ring oscillator includes a plurality of delay cells coupled in series as a ring, and a replica cell coupled to the delay cells to provide at least one bias signal to the delay cells. The replica cell includes a differential transistor pair formed of  
5 a first transistor and a second transistor. The first transistor has a drain terminal and a gate terminal coupled to the drain terminal. The second transistor has a drain terminal and a gate terminal coupled to the drain terminal of the second transistor.